

RESPONSE UNDER 37 C.F.R. § 1.116
Appln. No.: 10/674,396

Attorney Docket No.: Q77312

REMARKS

This Response, submitted in reply to the Office Action dated August 24, 2005, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Claims 1-6 remain pending in the application. Claims 1 and 6 have been rejected under 35 U.S.C. § 102(c) as being anticipated by Zhang et al. (U.S.P. 5,861,337, hereafter "Zhang '337"). Claims 2-3 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang '337 in view of Chenevas-Paule (U.S.P. 4,529,617). Claims 4 and 5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhang '337 in view of Zhang (U.S.P. 5,424,244, hereafter "Zhang '244"). Applicant respectfully submits the following arguments in traversal of the prior art rejections.

Applicant's invention relates to a semiconductor manufacturing apparatus including a hydrogen annealing chamber. The Examiner contends that Zhang '337 teaches a chamber *capable of hydrogen annealing*. Even if the device of a reference can be modified to operate in the manner of a claimed device, there must be a suggestion to do so. *In re Mills*, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990). In the present circumstances, Zhang '337 makes it clear that the annealing chamber is provided for purposes of annealing in a vacuum or an inert gas. Col. 2, lines 50-55. Therefore, there is no teaching or suggestion to provide a hydrogen annealing chamber to support the rejection. In fact, it is clear that Zhang '337 teaches annealing in a hydrogen deprived environment.

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The Examiner's Response to Arguments appears to suggest that the features of a hydrogen annealing chamber are not given patentable weight for the apparatus. Applicant submits that the description of a hydrogen annealing chamber requires structural features for the introduction of the gas into the chamber. This is clear from claim 1 and claim 6, for example. Therefore, the Examiner cannot properly ignore the description of the hydrogen annealing chamber as merely a method feature.

The Examiner also confuses the legal concept of "intended use" in explaining the rejection. The concept of intended use applies when the preamble sets forth the field in which a particular apparatus is to be used. See Ex parte Cullis, 11, USPQ2d 1876, 1878 (BPAI 1989). This is not the case in the present situation where the actual claim element describes a structural hydrogen annealing chamber. The claim preamble does not merely set forth a field of use, but the claim element sets forth a structural requirement for one of the processing chambers.

Finally, the Examiner suggests that a chamber where hydrogen is driven out of a film comprises a hydrogen annealing chamber. Applicant submits that the chamber in question is not merely a chamber, but a chamber for annealing, and more particularly, a chamber for annealing with hydrogen. It is not clear how a hydrogen-deprived chamber could teach a hydrogen annealing chamber. The Examiner cannot arbitrarily ignore features of the claimed chamber. Therefore, the anticipation rejection of claim 1 is clearly improper. **Relatedly, claim 6 makes it clear that annealing in a hydrogen environment is claimed.** The annealing, especially as described by claim 6 serves to reduce or terminate dangling bonds. This is the exact opposite of Zhang '337. Therefore, claims 1 and 6 are not anticipated.

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One skilled in the art would understand that there are differences between the claimed hydrogen annealing chamber, which introduce hydrogen into a film, and the hydration chamber of Zhang reference, which removes or discharges hydrogen from a film.

A heat treatment chamber 14 in the reference is used for removal of hydrogen that remains in amorphous silicon formed by plasma CVD. The hydrogen annealing chamber of the present invention has a purpose to improve an electrical defect by reducing or terminating dangling-bonds that remains in multi-crystal silicon after laser crystallization process by hydrogen (see page 9, line 14). Namely, this process is indispensable for introducing hydrogen in the silicon film.

The remaining claims are patentable based on their dependency as the remaining references of Chenevas-Paule and Zhang '244 do not make up for the above deficiencies.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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